

2. (Amended) The tobacco curing barn according to claim 1, further including at least one temperature sensor that detects temperature inside said enclosure, and at least one temperature sensor that detects temperature outside said enclosure.

3. (Amended) The tobacco curing barn according to claim 2, further including at least one humidity sensor that detects humidity inside said enclosure, and at least one humidity sensor that detects humidity outside said enclosure.

A 4. (Amended) The tobacco curing barn according to claim 3, wherein a programmable control system receives input from at least one of said temperature and humidity sensors and provides controlling output to at least one of said at least one in-line fan, said at least one ventilating fan, and said at least one openable and closeable opening.

5. (Amended) The tobacco curing barn according to claim 1, further including a device that injects an aqueous liquid into said vertically arranged air duct.

6. (Amended) The tobacco curing barn according to claim 5, further including at least one temperature sensor that detects temperature inside said enclosure, and at least one temperature sensor that detects temperature outside said enclosure.

7. (Amended) The tobacco curing barn according to claim 6, further including at least one humidity sensor that detects humidity inside said enclosure, and at least one humidity sensor that detects humidity outside said enclosure.

8. (Amended) The tobacco curing barn according to claim 7, wherein a programmable control system receives input from at least one of said temperature and humidity sensors and provides controlling output to at least one of said at least one in-line fan, said at least one ventilating fan, said at least one openable and closeable opening and said device that injects an aqueous liquid.

9. (Amended) The tobacco curing barn according to claim 8, further including a source of a disinfectant that can be added to said aqueous liquid to be injected by said device.

10. (Amended) The tobacco curing barn according to claim 1, further including a device that introduces steam into said vertically arranged air duct.

11. (Amended) The tobacco curing barn according to claim 10, further including at least one temperature sensor that detects temperature inside said enclosure, and at least one temperature sensor that detects temperature outside said enclosure.

12. (Amended) The tobacco curing barn according to claim 11, further including at least one humidity sensor that detects humidity inside said enclosure, and at least one humidity sensor that detects humidity outside said enclosure.

13. (Amended) The tobacco curing barn according to claim 12, wherein a programmable control system receives input from at least one of said temperature and humidity sensors and provides controlling output to at least one of said at least one in-line fan, said at least one ventilating fan, said at least one openable and closeable opening and said device that introduces steam into said vertically arranged air duct.

A 14. (Amended) The tobacco curing barn according to claim 13, further including a source of a disinfectant that can be added to said steam to be injected by said device.

15. (Amended) A method of air curing tobacco, the tobacco being hung in a tobacco curing barn comprising an enclosure having at least one vertically arranged air duct positioned in a central portion of the enclosure, at least one in-line fan positioned in a vertical portion of the at least one vertically arranged air duct, at least one ventilating fan located in an upper portion of the enclosure and at least one openable and closeable opening in at least one side wall of the enclosure, the method comprising:

opening the at least one opening; and

operating the at least one ventilating fan to force air down through the tobacco from the upper portion of the enclosure.

A<sup>2</sup> 17. (Amended) A method of air curing tobacco, the tobacco being hung in a tobacco curing barn comprising an enclosure having at least one vertically arranged air duct positioned in a central portion of the enclosure, at least one in-line fan positioned in a vertical portion of the at least one vertically arranged air duct, at least one ventilating fan located in an upper portion of the enclosure and at least one openable and closeable opening in at least one side wall of the enclosure, the method comprising:

closing the at least one opening; and

introducing an aqueous solution or steam into the at least one vertically arranged air duct and operating the at least one in-line fan to diffuse moisture and drive it upwards through the at least one vertically arranged air duct.

21. (New) The tobacco curing barn according to claim 1, wherein Burley tobacco plants hung on racks are located inside the barn.

A<sup>3</sup> 22. (New) The tobacco curing barn according to claim 1, wherein the at least one in-line fan, the at least one ventilating fan and the at least one openable and closeable opening are actuated by a programmable control system, the programmable control system operating according to a tobacco curing cycle.

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24. (New) The tobacco curing barn according to claim 1, wherein humidity within the barn is controlled relative to outdoor humidity by a programmable control system that

A<sup>3</sup> monitors the outdoor humidity using one or more temperature sensors and controls ventilation in the enclosure by opening one or more louvers in one or more walls of the enclosure.

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